

A METHOD AND SYSTEM FOR PUMPING A
CRYOGENIC LIQUID FROM A STORAGE TANK

ABSTRACT

A cryogenic liquid stream from a storage tank to be pumped is passed through the heat exchanger located within a phase separator vented to atmosphere and a subsidiary cryogenic stream is divided out of the cryogenic liquid stream and is diverted to the phase separator prior to a pump. Low pressure maintained within the phase separator causes the subsidiary cryogenic stream to boil off and form a liquid fraction that covers the heat exchanger. The liquid fraction, which is at a sufficiently low temperature, subcools the cryogenic stream passing through the heat exchanger. Flow of the subsidiary cryogenic stream is suspended when the height of the liquid fraction reaches a predetermined level and is reestablished when the level falls due to boil off. During periods of suspended flow, flow is temporarily reinitiated to prevent the accumulation of warm liquid and vaporized liquid near or at the inlet to the pump.